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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,891	02/19/2004	Solon Spiegel	RIO/US/0002	9072

7590 02/07/2007

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EXAMINER	
TIMORY, KABIR A	
ART UNIT	PAPER NUMBER
2609	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.	Applicant(s)	
10/780,891	SPIEGEL, SOLON	
Examiner	**Art Unit**	
Kabir A. Timory	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2, 5, 7, 17, and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(1) Claims 2, line 3, claim 3, line 3, claim 5, line 2, and claim 17, line 2, recite the term **"and/or"**. It is unclear which limitation in the claims this term pointing out to. However, the examiner suggests narrowing down the claim by specifically pointing out which subject matter and limitations each claim is referring to.

(2) Claims 7, line 3, and claim 19, line 3, recite the limitation **"in concert"**. There is unclear basis for limitation in the claims. The term **"in concert"** is not introduced before. There is no clear definition of this term. However, the examiner suggests clarifying and elaborating on the definition of the term **"in concert"**.

(3) Claims 9, line 2, and claim 10, line 2, claim 13, line 4, and claim 14, line 2 recite the term **"may be"**. The term **"may be"** is an indefinite statement and does not indicate to any specific functionality of the subject matter. However, the examiner

suggests clarifying the subject matter and specifically pointing out to each limitation in the claims with certainty.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al. (US Patent Number 6,088,583) in view of Montojo et al. (US Pup. Number 2004/0151264)

Regarding claim 1:

Shimizu et al discloses a method of receiving a communication signal comprising (figure 1):

- adjusting one or more parameters of an automatic gain control unit to correspond to the selected one or more signal types (column 3, lines 12-14) ; and
- providing one or more gain correction factors (figure 8, 116) from the automatic gain control unit (figure 8, 115) to one or more variable gain amplifier units (figure 8, 105).

Shimizu et al. discloses all of the subject matter as described above except for specifically teaching selecting one or more from a set of possible signal types to receive.

However, Montojo et al., in the same field of endeavor, teaches a front-end-filter (figure 1, 101) for selecting one or more from a set of possible signal types to receive.

One of ordinary skill in the art would have clearly recognized that in order for a receiver to select a signal type, a filtering technology is needed in the system, which filters the received signal in accordance with frequency bandwidth. By using such filter, the received signal is selected such that the filter passes through the signal carrying the information and filters all other unwanted signals. Moreover, for proper demodulation of the received signal, the receiver normally has a filter in the signal path that filters the signals, which are outside of the frequency range. In order to carry out the proper demodulation and filter all the unwanted signals, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a filter as above in the system as taught by Shimizu et al. In doing so the system would ensure the proper demodulation and selection of the right received signal. Also, using such filter is also advantageous in filtering the unwanted received signal, which are outside of the desired frequency bandwidth.

Regarding claim 2:

Shimizu et al. further discloses, the method according to claim 1, wherein adjusting an automatic gain control unit (figure 8, 115) comprises:

- adjusting weighting factors (column 6, lines 32-35) associated with a feed-forward and/or feed-back loop (the loop between the detector and AGC is interpreted to be the a feed-forward loop and the loop between the AGC to VGA and to detector is interpreted to be the feedback loop) (figure 2) .

Regarding claim 3:

Shimizu et al. further discloses, the method according to claim 2, wherein adjusting an automatic gain control unit further comprises:

- adjusting a signal sampling and/or gain factor update rate of the automatic gain control unit (figure 3, 46 shows an AD converter which perform the analog to digital conversion by sampling and quantizing the received signal and then coding the signal as binary sequence) (column 3, lines 34-36).

Regarding claim 4:

Shimizu et al. further discloses, the method according to claim 1, comprising:

- determining an initial gain correction factor by reading an initial sequence of information associated with the received signal (figure 3, 46 shows an AD converter which perform the analog to digital conversion by sampling, quantizing the received signal and then coding the signal as binary sequence) (column 5, lines 42 –46).

Regarding claim 5:

Shimizu et al. further discloses, the method according to claim 3, further comprising:

- reducing the sampling rate and/or gain factor update rate of the automatic gain control unit once an initial period of detection is completed (figure 3, 46 shows an AD converter which perform the analog to digital conversion by sampling, quantizing the received signal and then coding the signal as binary sequence) (column 3, lines 15 19).

Regarding claim 8:

Shimizu et al. further discloses, the method according to claim 1, wherein:

- a first set of gain correction factors applied to the one or more variable gain amplifier is derived from an initial received signal and primarily based on dynamics of a feed forward loop, while a second set of gain correction factors are based on a combination of the dynamics of a feed-back and feed-forward loops or solely based on the dynamics of the feed-back loop (figure 1, 7, 11, 12, column 5, lines 42-46).

Regarding claim 9:

Shimizu et al. further discloses, the method according to claim 1, wherein:

- the one or more of the gain correction factors (figure 8, 116) from the automatic gain control unit (figure 8, 115) may be provided to a variable gain amplifier unit (figure 8, 105) positioned at different frequency stages in the receive signal path (figure 8, 104).

Regarding claim 10:

Shimizu et al. further discloses, the method according to claim 1, wherein:

- the one or more of the gain correction factors (figure 8, 116) from the automatic gain control unit (figure 8, 115) may be provided to a one or more variable gain amplifier units (figure 8, 105), and wherein each of the one or more variable gain amplifier units is adapted to amplify a different channel (column 3, lines 17-19) of a complex communication signal (the complex communication signal is interpreted to be the I-channel signal and the Q-channel signal) (column 3, lines 20-24).

Regarding claim 11:

Shimizu et al. further discloses, the method according to claim 10, wherein:

- one or more of the gain correction factors from the automatic gain control unit are determined so as to correct for an amplitude imbalance (signal level is interpreted to be the amplitude of the signal) (column 3lines 33-35) between two more channels of a complex communication signal (the complex communication signal is interpreted to be the I-channel signal and the Q-channel signal) (column 3, lines 20-24).

Regarding claim 12:

Shimizu et al. further discloses, the method according to claim 1,

- further comprising interface matching for a GPS modem (GPS is interpreted to be a type of wireless or satellite communication system. It would have been obvious to one of ordinary skill in the art that AGC circuit and method can be used in any wireless or satellite communication system such as CDMA, GSM, WCDMA or GPS) (column 12, lines 30-34).

Regarding claim 13:

Shimizu et al. further discloses, a circuit for receiving a communication signal comprising:

- an automatic gain control unit including one or more adjustable operational parameters (figure 1, 11, abstract),

Shimizu et al. discloses all of the subject matter as described above except for specifically teaching one or more operational parameters may be adjusted corresponding to a signal type selected from a set of one or more signal types.

However, Montojo et al., in the same field of endeavor, teaches a front-end-filter (figure 1, 101) and a automatic gain control (AGC) circuit (figure 1, 105) for one or more

operational parameters may be adjusted corresponding to a signal type selected from a set of one or more signal types.

One of ordinary skill in the art would have clearly recognized that in order for a receiver to select a signal type, a filtering technology in needed is the system, which filters the received signal in accordance with frequency bandwidth. By using such filter, the received signal is selected such that the filter passes through the signal carrying the information and filters all other unwanted signals. Moreover, for proper demodulation of the received signal, the receiver normally has a filter in the signal path that filters the signals, which are outside of the frequency range. Further in the system AGC circuit would adjust other parameters such as power and amplitude level of the signal. In order to carry out the proper demodulation and filter all the unwanted signals and also to adjust other parameters of the signal such as power level, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a filter along with an AGC circuit in the system as taught by Montojo et al. In doing so the system would ensure the proper demodulation and selection of the right received signal. Also using such filter and AGC circuit are advantageous in filtering the unwanted received signal and adjusting other signal's parameters in compliance with the requ7ired threshold .

Regarding claim 14:

Shimizu et al. further discloses, the circuit according to claim 13, wherein:

- each of the one or operational parameter may be selected from the group consisting of feedback loop weighting factor, feed-forward loop weighting factor (the loop

between the detector and AGC is interpreted to be the a feed-forward loop and the loop between the AGC to VGA and to detector is interpreted to be the feedback loop) (figure 2) (column 6, lines 32-35),

- sampling rates associate with the feedback and feed-forward loop (figure 3, 46 shows an AD converter which perform the analog to digital conversion by sampling and quantizing the received signal and then coding the signal as binary sequence, and the loop between the detector and AGC is interpreted to be the a feed-forward loop and the loop between the AGC to VGA and to detector is interpreted to be the feedback loop) (figure 2)),
- gain value update rate of a first variable gain amplifier (figure 8, 105),
- gain value update rate of a first variable gain amplifier for a second variable gain amplifier (figure 8, 105),
- and target signal output power values (column 5, lines 26-29).

Regarding claim 15:

Shimizu et al. further discloses, the circuit according to claim 14, further comprising:

- one or more variable gain control units (figure 1, 11, 12),
- and wherein said automatic gain control unit is adapted to provide said one or more variable gain control units one or more gain correction factors figure 1, 7).

Regarding claim 16:

Shimizu et al. further discloses, the circuit according to claim 14,

- where said automatic gain control unit (figure 1, 11) is adapted to determine an initial gain correction factor by reading an initial sequence of information associated with a received signal column 1, lines 37-45).

Regarding claim 17:

Shimizu et al. further discloses, the circuit according to claim 16,

- wherein said automatic gain control unit (figure 1, 11) is adapted to reduce a sampling rate and/or gain factor update rate once an initial period of detection is completed (figure 3, 46 shows an AD converter which perform the analog to digital conversion by sampling and quantizing the received signal and then coding the signal as binary sequence) (column 5, lines 30-36).

Regarding claim 20:

Shimizu et al. further discloses, the circuit according to claim 19,

- wherein one or more of the gain factors from the automatic gain control unit are determined so as to correct for an amplitude imbalance between two or more channels of a complex communication signal (signal level is interpreted to be the amplitude of the signal) (column 3lines 33-35) between two more channels of a complex communication signal (the complex communication signal is interpreted to be the I-channel signal and the Q-channel signal) (column 3, lines 20-24).

6. Claims 6, 7, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al. and Montojo et al. as applied to claim 1, 13, and 14 above, and further in view of Kowalski et al. (US Patent Number 6,859,504).

Regarding claims 6, 7, 18 and 19:

Shimizu et al and Montojo et al. disclose all of the subject matter of claim 1 as described above except for specifically teaching adapting the frequency response of one or more elements in the received signal path is performed either in concert or shortly after providing one or more gain correction factors.

However, Kowalski et al., in the same field of endeavor, teaches adapting the frequency response of one or more elements in the received signal path (RF signal is interpreted to be received signal) (column 5, lines 64-72).

One of ordinary skill in the art would have clearly recognized that in order for a receiver to select a signal type, a filtering technology is needed in the system, which filters the received signal in accordance with frequency bandwidth. By using such filter, the received signal is selected such that the filter passes through the signal carrying the information and filters all other unwanted signals. also, in order to provide additional filtering for noise in the system such as high frequency noise, filtering the frequency response of the received signal would be appropriate. This additional filtering of high frequency noise can be carried out after AGC gain correction (figure 3). In doing so, the quality and precision of the signal will be improved. In order to carry out the proper demodulation and filter all the unwanted signals and noise, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include additional filtering for frequency response in the system as taught by Kowalski et al. In doing so the system would ensure the proper demodulation and selection of the right received

signal. Also, using these filters are advantageous in filtering the unwanted received signal and reducing the noise level in the system such as high frequency noise.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kabir A. Timory whose telephone number is (571) 270-1674. The examiner can normally be reached on Mon - Thu 6:30AM - 4:00PM & Fri 6:30AM - 3:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on (571) 272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kabir A. Timory
February 2nd, 2007

SHUWANG LIU
SUPERVISORY PATENT EXAMINER

Notice of References Cited	Application/Control No. 10/780,891	Applicant(s)/Patent Under Reexamination SPIEGEL, SOLON	
	Examiner Kabir A. Timory	Art Unit 2609	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,088,583 A	07-2000	Shimizu et al.	455/235.1
*	B	US-2001/0053680 A1	12-2001	Yamanaka et al.	455/232.1
*	C	US-2004/0151264 A1	08-2004	Montojo et al.	375/345
*	D	US-6,859,504 B1	02-2005	Kowalski, John M.	375/345
*	E	US-6,996,386 B2	02-2006	Yamanaka, Kazuya	455/234.2
	F	US-			
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	I	US-			
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FOREIGN PATENT DOCUMENTS

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NON-PATENT DOCUMENTS

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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
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